

# Surface Mount Frequency Mixer

## ADEX-10+

### Level 7 (LO Power +7 dBm) 10 to 1000 MHz

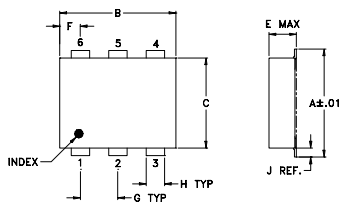
#### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

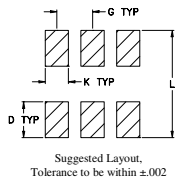
#### Pin Connections

LO	6
RF	3
IF	2
GROUND	1,4,5

#### Outline Drawing



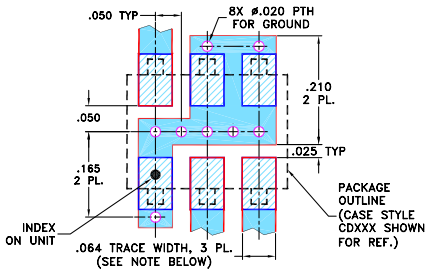
#### PCB Land Pattern



#### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54
H	J	K	L	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	0.20		

#### Demo Board MCL P/N: TB-03 Suggested PCB Layout (PL-052)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

#### Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
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#### Features

- excellent L-R isolation, 60 dB typ.
- flat conversion loss, ±0.2dB typ over entire band
- low conversion loss, 6.8 dB typ.
- good VSWR, 2:1 typ. for LO, 1.4:1 typ. for RF, 1.8:1 typ. for IF
- good performance to 1500 MHz
- aqueous washable
- protected by U.S. Patents 6,133,525 and 6,947,717

#### Applications

- cellular
- PCN



Generic photo used for illustration purposes only  
CASE STYLE: CD542

#### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200
13"	500, 1000

#### Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
LO/RF	IF	Mid-Band		Total	L	M	U	L	M	U								
$f_L$ - $f_U$		$\bar{X}$	$\sigma$	Max.	Range Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.						
10-1000	DC-800	6.8	0.10	7.8 <sup>†</sup>	8.3 <sup>†</sup>	80	55	60	40	47	37	40	26	33	20	24	13	16

1 dB COMP: +1 dBm typ.

<sup>†</sup>Conversion loss increases 0.5 dB when IF is above 150 MHz

L = low range [ $f_L$  to 10  $f_L$ ]

m = mid band [ $2f_L$  to  $f_U/2$ ]

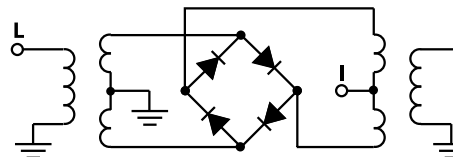
M = mid range [ $10f_L$  to  $f_U/2$ ]

U = upper range [ $f_U/2$  to  $f_U$ ]

#### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
10.00	40.00	6.86	80.91	62.86	1.43	1.59
25.00	55.00	6.73	80.18	55.33	1.43	1.62
40.00	70.00	6.78	78.88	51.04	1.41	1.56
55.00	85.00	6.77	77.53	47.55	1.40	1.55
70.00	100.00	6.72	77.00	45.78	1.41	1.61
85.00	115.00	6.74	75.52	44.15	1.40	1.62
100.00	130.00	6.76	75.63	42.50	1.39	1.61
200.00	230.00	6.72	76.11	36.93	1.36	1.61
300.00	330.00	6.69	77.57	34.10	1.35	1.64
400.00	430.00	6.64	62.74	33.06	1.35	1.66
500.00	530.00	6.65	56.43	32.02	1.35	1.72
600.00	630.00	6.71	53.73	30.71	1.34	1.77
700.00	730.00	6.89	50.35	29.89	1.36	1.91
800.00	830.00	6.68	47.01	28.37	1.34	1.83
900.00	930.00	6.59	48.15	26.00	1.23	2.02
1000.00	1030.00	6.66	52.10	23.48	1.11	2.09

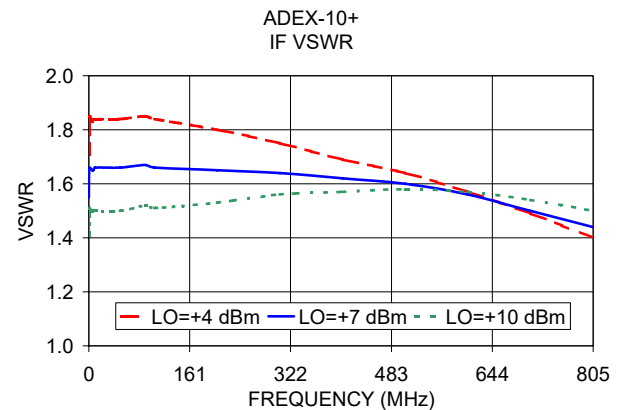
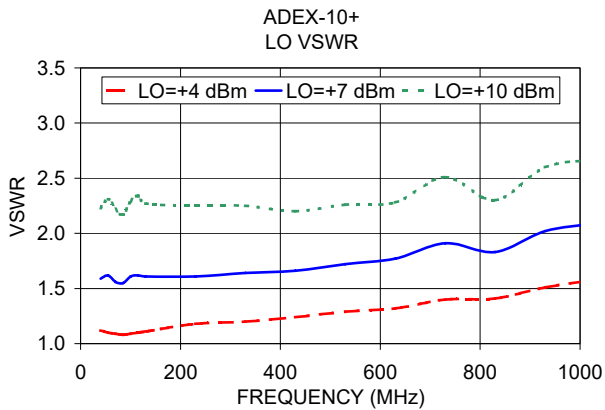
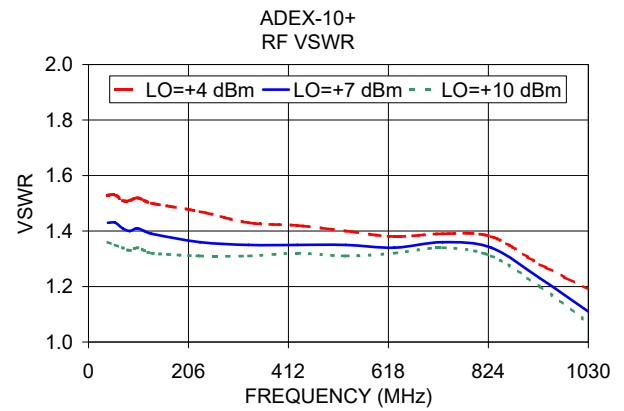
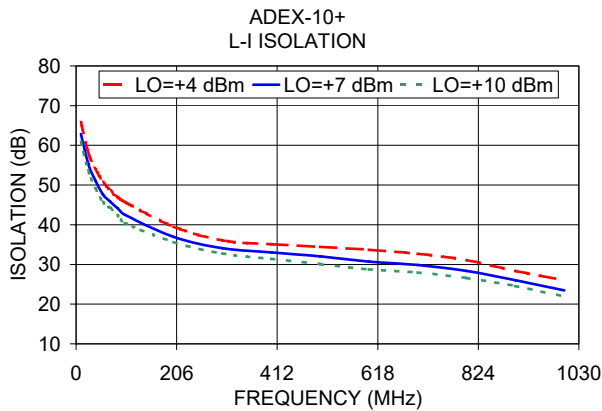
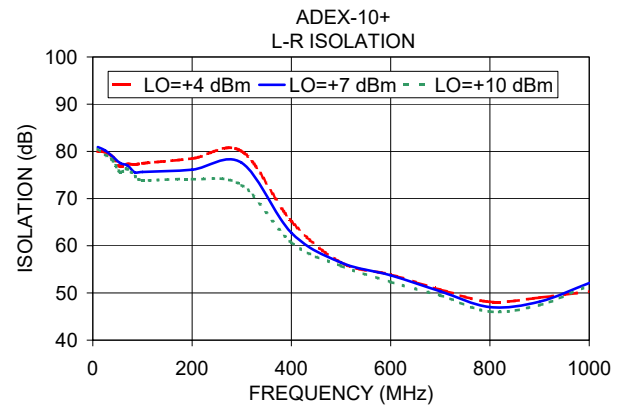
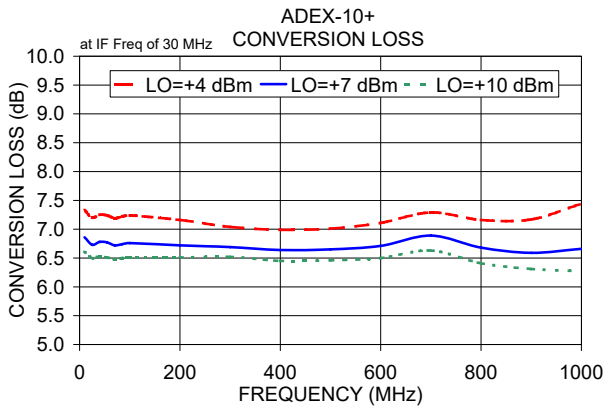
#### Electrical Schematic



**Mini-Circuits**

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